What Is Claimed Is:

1. A method for formatting received data within an adaptive broadcast radar system having a transmitter comprising sub-apertures and a receiver comprising sub-apertures, wherein said data is received at said receiver, comprising:

providing an estimate for a delay of scattered signal components within said received data;

generating an index for said estimate, wherein said index includes a transmitter element number and a receiver element number;

generating a data quad for said index; and

estimating a measurement covariance and a weight vector for said data quad, wherein said data quad is reformatted with said measurement covariance and said weight vector.

2. The method of claim 1, further comprising compensating said receiver data for a motion of said transmitter or said receiver.

3. The method of claim 2, further comprising removing a doppler shift from said receiver data.

4. The method of claim 1, further comprising estimating a direct path component from said received data.

5. The method of claim 4, further comprising cancelling said direct path signal from said received data.

6. The method of claim 1, wherein said received data includes a code encoded by said transmitter, said code including information about said transmitter.

7. The method of claim 6, wherein said information includes degrees of freedom.

8. The method of claim 1, further comprising segmenting said received data according to a coherent processing interval.

9. The method of claim 8, wherein said segmented data correlates to said estimate.

10. The method of claim 1, wherein said estimate further includes a doppler delay.

11. The method of claim 1, further comprising determining said weight vector from a steering vector.

12. The method of claim 1, wherein said estimating a measurement covariance includes using a channel transfer function.

13. A method for obtaining target parameters within an adaptive broadcast radar system, comprising:

coding information about a signal waveform generated by a transmitter having sub-apertures;

receiving a signal at a receiver having sub-apertures corresponding to said sub-apertures of said transmitter, wherein said received signal correlates to said signal waveform;

decoding information about said signal waveform from said received signal;

determining a data quad from said decoded information, wherein said data quad includes degrees of freedom associated with said transmitter.

14. The method of claim 13, further comprising generating said signal waveform within said sub-aperture of said transmitter.

15. The method of claim 13, further comprising applying a phase shift to said signal waveform within said transmitter sub-apertures.

16. The method of claim 15, further comprising applying a weight vector to said signal waveform within said transmitter sub-apertures.

17. The method of claim 16, further comprising motion compensating said received signal by removing said weight vectors and said phase shifts.

18. The method of claim 13, wherein said received signal is a composite of transmitted signal from said signal waveform.

19. The method of claim 13, further comprising generating a channel transfer function comprising delay and doppler signal components of said received signal.

20. The method of claim 19, wherein said determining includes formatting said channel transfer function with a weight vector and measurement covariance of said received signal.

21. The method of claim 20, wherein said signal waveform is transmitted as an orthogonal waveform.

22. A method for generating a sensor signal model for a received signal within an adaptive broadcast radar system, comprising:

defining a clutter component for said received signal at a receiver, wherein said clutter component comprises a direct path signal and a scattered signal;

defining a channel transfer function;

generating a sampled version of said received signal according to said channel transfer function at a sample time;

determining a batch of data from said sampled version for a sub-aperture of said receiver at said sample time; and

indexing said batch of data into said sensor signal model.

23. The method of claim 22, wherein said sensor signal model is a linear system model.

24. The method of claim 22, wherein said batch of data includes a delay.

25. The method of claim 22, further comprising linearizing a phase delay within said channel transfer function to determine a doppler shift component for said received signal.

26. The method of claim 25, further comprising absorbing said phase delay into said channel transfer function.

27. The method of claim 25, wherein said phase delay correlates to a direction of clutter relative to said receiver.

28. A method for transmitting a signal waveform from a transmitter within an adaptive broadcast radar system, wherein said transmitter comprises at least one sub-aperture, comprising:

generating said signal waveform at said at least one sub-aperture;

coding said signal waveform at said at least one sub-aperture, wherein said signal waveform is coded with transmitter data;

phase shifting said signal waveform at said at least one sub-aperture; and

transmitting said coded signal waveform from an array element coupled to said sub-aperture according to said phase shifting.

29. The method of claim 28, further comprising applying a weight vector to said signal waveform at said at least one sub-aperture.

30. The method of claim 28, wherein said transmitter data includes the degrees of freedom associated with said transmitter.

31. The method of claim 28, further comprising creating a train of pulses from said signal waveform within said transmiter, wherein said train of pulses are coded.

32. A method for performing radar operations within an adaptive broadcast radar system, wherein said radar system includes a transmitter having a first plurality of sub-apertures and a receiver having a second plurality of sub-apertures, comprising:

encoding data on a signal waveform at SAID transmitter, wherein said data includes a number for said sub-apertures of said transmitter and degrees of freedom for said transmitter;

continuously transmitting said signal waveform;

determining a delay value and a doppler value for received signals at said receiver, wherein said received signals comprise direct and scattered signals of said signal waveform; and

regenerating a transmit signal beam correlating to said signal waveform from said received signals using said data, said delay value and said doppler value.

33. The method of claim 32, further comprising shifting a phase of said signal waveform prior to said transmitting.

34. The method of claim 33, further comprising removing said phase from said received signals.

35. The method of claim 32, further comprising adding a weight vector to said signal waveform prior to said transmitting.

36. The method of claim 35, further comprising removing said weight vector from said received signals.

37. The method of claim 32, wherein said encoding comprises orthogonal encoding.

38. The method of claim 32, wherein said encoding comprises pseudo-orthogonal encoding.

39. The method of claim 32, further comprising generating a steering vector for said transmit signal beam.

40. The method of claim 32, further comprising generating a weight vector for said transmit signal beam.

41. The method of claim 32, further comprising controlling said transmit signal beam from said receiver.

42. The method of claim 32, further comprising scattering said signal waveform from a target to generate said scattered signals.

43. The method of claim 32, wherein said transmitter is in motion.

44. The method of claim 32, wherein said receiver is in motion.

45. The method of claim 32, further comprising generating a data quad comprising said data, said delay value, and said doppler value.

46. An adaptive broadcast radar system, comprising:

a transmitter comprising a first plurality of sub-apertures, wherein each sub-aperture codes a signal waveform with data; and

a receiver comprising a second plurality of sub-apertures coupled to a signal processor, wherein said signal processor generates a transmit beam signal according to said data within each signal waveform.